

Question: How soon after your letter did they make these changes?

Answer: The changes in the top carbon holders were made about two months later, and the changes in the dash pots were also completed about that time.

Question: The changes in the dash pots and carbon holders were made in two months.

Answer: Yes, sir.

Question: I did not understand you to have said anything before about any top carbon holders.

Answer: That's the top carbon holder. That's this coiled pig tail holder.

Question: Why did you write two other letters to the company recommending the same changes?

Answer: It took two months to get it done.

Question: I took two months to get it done?

Answer: Yes, sir.

Question: Did you write the other two letters within the two months?

Answer: Yes, sir.

Question: When did you sever your connections as engineer with the Alexandria Electric Company?

Answer: In the month of June, 1930.

Question: As late as April and again in May you wrote to them about this?

Answer: Yes, sir.

Question: The changes were made in two months what was the object of your writing again in April and May when the changes had been made?

Answer: On the 24th of February Mr. McIver, and recommended these changes again. If you will remember my testimony I said it took all of two months to get the changes made. He called him again on March 24th and told him about the changes. He said that the changes had been made, and called his attention again to the carbon holders. That was the report at the end of March. In a letter dated that of April, in which I told Mr. Usher that the service was improving and I did not call his attention again to the way in which the lamp should be trimmed because I did not want to keep on repeating the same thing.

Question: At the time the changes in the lamps were made from 6.6 to 7.5 amperes was anything changed in the lamps but the series coils, if they were changed?

Answer: I believe not, except that a number of new lamps were purchased. I don't know how many.

Question: I mean in the lamps that were recoiled?

Answer: Nothing but the one coil was changed to my knowledge.

Question: The current in the evening when the current is on the light what is the trouble? What is that due to?

Answer: To the fact that if the current is at once brought up to the full value of 7 1/2, as the coils and the regulators were not run in the circuit, the current could not be started at the full value at once, they ought to start at seven and two or three-tenths and gradually bring it up. They they would not run the risk. That is to save the gas caps, not to save the current.

Question: Should that apply to all the lamps in the circuit?

Answer: Yes, sir.

Question: Assuming that the lamp on the corner of King and Fairfax streets when it is first lighted begins to flicker and flickers on that way for two or three hours, while other lamps on King street, say the lamp at the corner of King and Royal streets, burn brightly, what is the cause of the flicker in the individual lamp?

Answer: You have told us the candle power is a flame, of a piece of hot steel, and of the sun, what is the candle power of these are lamps on the streets in the city of Alexandria?

Answer: 360 or 380, possibly 400 candle power.

Question: In answer to a question asked by Mr. Harlow you said that if the trimming of the lamp were changed as you had recommended that that would put the company in a position to save the terms of the contract with the city. Do you mean to tell us that this unsatisfactory condition of the lights about which you have previously testified would be entirely remedied by that?

Answer: Granting that the current is the correct amount, the only trouble I could see was in the lamps and in the behavior of the regulators.

Question: That is based on the assumption that the proper current is maintained and that the action of the regulators are proper. Can you state whether the proper current is going through the lamps?

Answer: Yes, sir. You have said months ago when I visited the plant frequently it was.

Question: How often did you visit the plant?

Answer: Twice a month and sometimes three or four times up to May.

Question: At the time you left the company had the regulators been changed? Had they been adjusted?

Answer: How do you mean adjusted?

Question: I understand you stated you had a man here from Fort Wayne to adjust the regulators?

Answer: He found no trouble with them, he said. In other words there was nothing wrong with them.

Question: Was the defective condition of the regulators ever changed while you were in the service of the company?

Answer: No, sir.

Question: Has it been done up to this time?

Answer: I know nothing about since that time.

Question: Do you think you can take a 6.6 ampere lamp and simply change the series coil and that lamp will then perform satisfactory service with 7.5 coils in it?

Answer: Yes, sir; you change the part which uses the current.

Question: Nothing needs to be adjusted?

Answer: I am not sufficiently familiar with the different types of lamp to say that. But the method would be to take down the lamp and bring it in and take out the old coils and put in new coils and test it on the actual working circuit, which was always done here, then the lamp was adjusted to run on the regular circuit, which ran into the room behind the office. There are different types of lamp, even the same type of lamp manufactured in different years are sometimes different; you might have to change one and not the other, and then you test the coils and make such changes in the lamp as are necessary, if they are necessary.

Question: Were these lamps tested to your knowledge?

Answer: Those that were repaired were tested, yes, sir.

Question: How many were repaired?

Answer: All of them had the dash pots and the carbon holders changed.

Question: Then all were tested?

Answer: Yes, sir.

Question: Was that after the change was made?

Answer: Yes, sir; a year after the change in the system was made that change was supposed to have been made.

Question: Why do you say that?

Answer: I don't know for granted that the change was made and so stated to the committee.

Question: You say they were tested?

Answer: Yes, sir; they used 7 1/2 amperes.

Question: You stated that the unsatisfactory condition and the behavior of the lamps is due, I mean this service that is rendered to the city, is due to the behavior of the employees of the company, but to the behavior of the individual lamps.

Mr. Harlow: He did not say anything about the behavior of the employees.

Mr. Betts: No, sir; I did not. I said the behavior of the lamps.

Mr. Fisher: I thought you said the employees; if you said the lamps, that is all right. Have you had any experience in this matter?

Answer: Yes, sir.

Question: Do you think it proper management of an electric light company that has eighty-six lights in service not to have a single reserve inner globe or other globe?

Answer: I consider that very poor.

Question: Do you consider that proper management or a proper attempt to live up to its contract?

Answer: No.

Question: Mr. Harlow: Is there any provision that you know of in this contract as to the amount of stock that is to be kept on hand?

Mr. Betts: It says that the service has been maintained throughout the entire time of the contract, and that implies of course that the company must do everything in its power to keep them going. It does not say that the company is not obliged to keep any certain amount of stock on hand, but if they have not the stock to keep up the light all the time they don't live up to the contract.

Mr. Spinks: Here's a question that you consider the lamp they have a proper lamp? Your answer was, No, sir. Mr. Hill asked you, Do you think the Alexandria Electric Company is furnishing this city proper light according to the contract made with the city. Here in this city, Mr. Hill asked you, Can the Alexandria Electric Company have a lamp made that will carry out the terms of the contract made with the city, and you answered, Yes, sir. How do you explain all that?

Mr. Spinks: Here's interpretation of the contract is that it was the intention to furnish this city a street lighting service equivalent to the old street lighting service, but I don't think they can be required to furnish a lamp that is lower under that, because they could not do it. The city of Newark, New Jersey, has a contract to use a flaming arc light and they pay \$280 per month for each lamp. Of course that has a greater candle power than any other lamp used there for advertising purposes; the city is not paying that. The city couldn't pay that.

Question: By paying more for the lights they could get that in this city I speak of the city pays \$70 and the merchants pay the same amount for the other night is it possible for you to go out tonight or in the morning and take down certain designated lamps and tell whether the coil in it was a 6.6 ampere coil or not? You answered, I don't think so. There may be some mark on there that the factory people could distinguish.

Mr. Spinks: Do you consider the Fort Wayne lamp a standard lamp? You answered, I do not. Mr. Spinks: That question was asked Mr. Kirby and he stated he did not consider that lamp the highest type lamp. Do you say that?

Answer: Yes, sir.

Mr. Spinks: That is the lamp that was put in? Your answer was, Yes, sir. That is the proper questions and your replies, is it?

Answer: I believe so.

Mr. Harlow: Mr. Betts, when you were asked whether that is a standard lamp, will you say that was a standard lamp when the contract was entered into, was it?

Answer: No, sir.

Question: Will you state whether or not the lamp that was installed here was the highest type of Fort Wayne lamp that was on the market?

Mr. Betts: I think not. It was a 6.6 ampere lamp.

Mr. Spinks: Do you think it was the original intention of this company not to give us the light we were paying for?

Mr. Betts: I hardly think that.

Mr. Spinks: You say the lamps were made here, that they should have had 7.5 ampere lamps? On the streets tonight they are burning those same old lamps except that new coils have been put in there. Here is the question, would you change these lamps, would you have purchased some other than the Fort Wayne lamp, and you answered, Yes, sir. But they did not want to buy these carbon holders at \$21. It took them a long time to get that, and when it comes to spending more than nine hundred—

Then I asked you, You don't know that the present company has done anything to better the conditions in the last year? You answered, No, sir. All your knowledge is about what happened before these people came in. Yes, sir. Your connections with this company were severed over a year ago. You don't know anything about the conditions existing today?

Mr. Spinks: Here is your answer to the question: You don't know that the present company has done anything to better the conditions in the last year? You don't know anything about what has transpired since you left the company?

Answer: About what has transpired?

Mr. Spinks: You don't know what the company has done since a year ago?

Mr. Fisher: I asked you about the changes in the ampere coils in the lamp, if it did not require changes in the different parts of the lamps, and you answered that would depend on the type of the lamp; it would not depend on that as to lamps manufactured by the same company in different years?

Mr. Betts: Yes, sir.

Mr. Fisher: How often does the Fort Wayne Company get out new lamps?

Mr. Betts: I don't know that. They get out bulletins about once a year each of them may or may not show little changes that are made in the lamp.

Mr. Fisher: Have you examined these lamps?

Answer: Yes, sir.

Mr. Fisher: Can you tell this committee upon your examination what

year they were manufactured, whether in 1903, or 1902, or in 1906, or in 1905?

Mr. Betts: No, I can't say. Of course they were manufactured before they were sent here. That was in 1906 or 1907.

Mr. Fisher: At the time you made this report that the change had been made from 6.6 to 7.5 you did not know whether any other change in the lamp was necessary or not?

Answer: No, sir; that report referred to changes in the system only.

Question: What do you mean by that?

Answer: The amount of current used in the lamps. Previously the current had been 6.6 amperes. That amount did not appear to give sufficient light, and it was necessary to change the coils to 7.5 so as to get a greater amount of current.

Question: You did not know whether other changes in the lamp were necessary?

Answer: No, sir. That would not be any recommendation as to the system; that had to do with the lamps themselves. If they had a thousand coils to take out or lamps to change this report had nothing to do with that.

Question: Will you refer to your letter of January 30th again. You state in here that one lamp in particular which has been reported as being out every night is all right now?

Answer: That was what Mr. Usher said.

Question: Tell this committee what lamp that was.

Answer: I don't know. He said he saw it every morning, I think from his house. I had borrowed some half dozen of these coiled pig tail holders and that lamp was reported as being out every night, and one of them was out of course they made that change and then the light got better right away.

Question: As a matter of fact, was that lamp on the corner of Washington and Duke Streets?

Answer: I don't know.

Question: Did the Alexandria Electric Company buy a Westinghouse lamp and put in on that corner?

Answer: There was a Westinghouse lamp there, but I don't know where it was put up.

Questions by Mr. Harlow:

Mr. Harlow: When was the Colorado Springs decision rendered?

Mr. Betts: In 1907.

Question: The Colorado Springs decision was entered into on the 9th day of August, 1906. Is it not a fact that at that time there were a great many cities that had 6.6 ampere lamps, and that those lamps were regarded as being a nominal 2,000 candle power lamp?

Answer: Yes, sir.

Question: At the time of this contract it had not been determined even by the electric association that the 6.6 ampere lamp did not fill these requirements?

Answer: No, sir.

Question: In many places the 6.6 ampere lamp was regarded as being a nominal 2,000 candle power lamp at that time, was it not?

Answer: If it was ever discussed it was in that way.

Question: Do you consider that the city of Alexandria has a sufficient number of lamps to light it?

Answer: I would put in about four times as many lamps as they have now. I think they have enough are lights, but they are not in the right place.

Question: You think the city is insufficiently lighted?

Answer: I don't know that the city ought to spend any more money for lighting, but as to better lighting, four times as many lights could be put in.

Question: The trees interfere with the lighting, don't they?

Answer: Yes, sir.

Question: How long have you been connected with this company?

Mr. Harlow: You are the general manager of the Alexandria Electric Company?

Mr. Weller: Yes, sir.

Question: How long have you been connected with this company?

Answer: About 10 years.

Question: How long have you been connected with it in the capacity of general manager?

Answer: For the same period of time.

Question: Did you ever take up with Mr. Kirby while he was with the company the question of arc lamps?

Answer: That was the first question we took up. In fact we took up that question before we bought the plant.

Question: Did you find out about it from him?

Answer: Mr. Kirby on a number of occasions assured me that the lamps were all right, and he made a number of inspection trips around the city myself and I found them satisfactory. Mr. Kirby told me that all the lamps had 7 1/2 ampere coils in them. I might state here that I knew about this question of candle power lamps, and for that reason we took particular care to see that the lamps had been changed to 7 1/2 ampere lamps. We were satisfied of that.

Question: What system did you install for the purchase of supplies?

Answer: I have found that in every plant that I had anything to do with the greatest loss was in the purchasing department. All the supplies are now bought on requisition from the Superintendent here in Alexandria.

Question: When you bought the plant were you assured by Mr. Kirby and by your own investigation that there were 7 1/2 ampere coils in all the lamps?

Answer: Yes, sir.

Question: Has Mr. Kirby ever drawn any requisition on you for 7 1/2 ampere coils?

Answer: No, sir, not to my knowledge. I knew there were some 7 1/2 ampere coils on hand; I didn't recall his ever drawing on me for any additional coils.

Question: Did you ask Mr. Kirby with regard to the question of coils when you first came here?

Answer: I have asked him repeatedly, and he always assured me that the lamps were all right, and he said that he had no money to amount to anything. As long as he was in our employ he did not intimate that the lamps were not up to the standard.

Question: Has the company ever been notified that the lamps were not up to the standard?

Answer: Absolutely not. We have never been notified that the service was not satisfactory; the only notice we had was the notice we saw in the papers that Councilman Spinks had introduced a resolution to that effect into the city council. I took up the question with Mr. Usher on several occasions, and he always assured me that the lamps were satisfactory; I have here a letter to him which I would like to insert.

November 12th, 1909.

L. E. Usher, Councilman Lights, Dear Sir: I have seen in the newspaper that councilman Spinks

has introduced a resolution in the council inquiring into the question of street lighting for the city; also inquiring as to the capacity of the Alexandria Electric Company's plant for the demand of service in Alexandria and suburbs.

Feeling that your committee would desire information on this subject, I take the liberty of writing for the purpose of submitting the facts in the case.

As the street arc lamps the contract between the city and the plant calls for street arc lamps of 2,000 c. p. capacity. The lamps installed are known as 7.5 ampere series street lamps. These lamps are rated at 2,000 c. p. and satisfactory is accepted by engineers central stations and municipalities. There has been a number of legal decisions which have arisen over the definition of the candle power of the Colorado Springs case is probably the most noted and most widely quoted. Here it was decided that 7.5 ampere series arc lamps were equivalent to 2,000 candle power. To my personal knowledge, and since July 1st the arc lamps have been on an average of 7.5 ampere, which is shown on the daily log kept at the plant. As to what was done previous to that time, I have only the statement of Mr. Kirby, the superintendent. Mr. Betts informed me that prior to our purchase of the plant, the lamps complied with the requirements of the contract.

At the further time we have three regulators, and these three regulators have 150 arc lamps, where as there are only 87 now installed, so we have ample capacity for the increased demand.

The company employs one man, whose duty it is to trim the lamps and make hourly rounds of the city at night to see that all lamps are burning. During the last six months there have been no deductions by the town for outages, which, I think, shows that the service is satisfactory.

As to the capacity of the plant, when we took the management of the plant on July 1st, I found the maximum peak almost equal to the total capacity installed, which was 340 kilowatts. We desired to enlarge the plant, believing there would be a considerable increase in the use of electricity for lighting power, and also for power. The large number of power manufacturers could be induced to come to Alexandria and also with the idea of giving service to the suburbs. We decided to put in a steam turbine which rates 625 kilowatts and has a capacity of 650; in other words we have more than tripled the capacity of the plant, which has involved an investment of nearly \$30,000.

Our present capacity of plant is considerably above the average for a city with the population of Alexandria.

We estimate with the addition of Fort Washington, Del Ray and other suburban town, our total peak will not exceed 500 kilowatts, and the light and power plant and motor load at the present time is about 300 kilowatts, so we will have a surplus of power at night sufficient to operate 10,000 more incandescent lamps, and many more factories in the day time.

We are also giving service to the city and the members of the City Council make inspection of our plant, and feel sure they will be convinced that it is the company's desire to give satisfactory service and to be ready to meet every demand for light and power. I might say here that the plant is now being run on night circuits will be run from the power house to supply the suburbs, and this will not interfere with the town service. Any break down in the suburban line will not effect the city service. We are also planning to greatly increase our present business in order to pay return on the large additional investment.

I shall be pleased to appear before your committee and furnish any further information which may be required. Respectfully submitted,

Alexandria Electric Co., By F. R. Weller, General Manager.

Mr. Spinks: Did you get a reply to that letter?

Answer: Mr. Usher acknowledged that to me and he said that I need not bother about it.

Question: Did you buy any gas caps for the arc lamps?

Answer: Yes, on several occasions.

Question: You have heard the recommendations which Mr. Betts read regarding the improvements he recommended and which he said ought to be made, and you have no personal knowledge that those improvements had been made?

Answer: Except the trimming of the arc lamps. I could not get Mr. Kirby to trim the lamps in accordance with the recommendations. He said that Mr. Betts was a theoretical man and that he knew better. But when we got our new superintendent I gave him instructions to trim the lamps in accordance with Mr. Betts' report.

Question: Have you had any experience in electrical matters in cities other than Alexandria?

Answer: Yes, sir. I have been consulting engineer for a number of cities. I am at the present time building a plant where I am consulting engineer at Bedford City. I have been consulting engineer for the city of Richmond, Virginia, and for four or five towns in North Carolina, and I have had various experience in power plants and electrical work.

Question: In the electrical world what is the generally accepted 2,000 candle power lamp?

Answer: A 7 1/2 ampere lamp is generally accepted as being a 2,000 candle power lamp.

Question: Was it at the time we entered into this contract?

Answer: I assume so. I had nothing to do with the making of the contract.

Question: In all that work that you have had with different cities, and for different cities, if you agreed at this time to furnish such a lamp, would you furnish a 7 1/2 ampere lamp?

Answer: In the city of Oxford, North Carolina, we have the same contract as you have here, and we put in 7 1/2 ampere lamps, and it is stated in the contract just as it is in this, that the lamp is to be a 2,000 candle power lamp.

Mr. Spinks: Where did you say this was?

Answer: Oxford, North Carolina.

Question: Prior to the Colorado Springs decision in 1907, were there many cities that were using 6.6 ampere lamps that were considered as a nominal 2,000 candle power lamp?

Answer: I don't know of any city that was not decided definitely until the case you mention. That always a question about which there was considerable discussion.

Mr. Spinks: That contract between Colorado Springs and the city of Colorado was entered into in 1898, eight years previous to the time we entered into the contract with this company?

Answer: Yes, sir.

It is due to an error in the clerical force of the company the rates charged were lower than the rates named in the Mandeville proposition. It is due to a mistake by some one when the first bills were made out.

Question: In other words the Alexandria Electric Company is charging less than the rates it is entitled to charge under the contract?

Answer: Yes, sir.

Question: Do you know any of the experts in the Colorado Springs case?

Answer: Yes, Mr. Marks. I had a conversation with him within the last two weeks.

Mr. Fisher: That conversation is not proper.

Mr. Harlow: Mr. Fisher cannot get away from his legal habit of objecting to things. I take it that anything that will throw any light on the subject I think it is proper before an investigating committee. If the committee don't want to hear it, why it is all right.

Mr. Spinks: I don't think that is proper. You could have him come here and make the statement for himself, if you want to examine him as a witness.

Mr. Harlow: If the committee is willing to hear it or if you want to hear it, we will state it; I understand that you want light on the subject, we are trying to get it. If you don't want to hear it, that is something else.

Mr. Spinks: Our testimony has all been from people who had knowledge of the conditions. All our testimony is from people who know what is about it except the officials of the company.

Mr. Harlow: Experts don't have to have personal knowledge. I want you to remember that all the testimony we have had has been from people who are present owners and directors of the company.

The witness: T. C. Coleman, President; J. C. M. Lucas, Vice-President; H. B. Lucas, Secretary and Treasurer, these with Mr. Portner, are the directors.

Question: Have any of them knowledge of or experience in electrical matters?

Answer: Mr. J. C. Lucas is the District Manager for the Baltimore District of the Allis Chalmers Company, and H. P. Lucas is the manager of a large electrical construction company in Baltimore.

Questions by Mr. Fisher:

Mr. Fisher: You state that your testimony being that of an expert is impartial, and that you are here as an expert. State your experience.

Answer: I have just done that.

Question: You have been engineer for a number of different cities and corporations, I am engineer for the Tennessee Power Company, I am engineer at the Watouza River, I am engineer for Bedford City, Virginia, that is building an electrical water plant on the James River, and I have built a number of other plants in the past eight years.

Question: You are consulting engineer for five concerns, or cities, that are now in process of operation or construction?

Answer: One is in process of construction, one plant will be completed in two weeks, the other one will be begun in about two weeks.

Question: You represent about three million dollars?

Answer: Yes, sir.

Question: Where did you receive your experience in electricity?

Answer: In the construction of a number of plants in the last seven years. I graduated from Columbia in the department of civil engineering.

Question: You did not take electrical engineering?

Answer: I took certain electrical subjects.

Question: You say you are an expert?

Answer: I would not state that I am an expert; but I think that I know something about it.

Question: You state that you made an inspection, and make inspections here in town?

Answer: Yes, sir; all the work in the changes and improvements has been under my supervision.

Question: How often do you make an inspection?

Answer: Every day in the week, up to a month ago.

Question: How could you devote so much of your attention to Alexandria when you are consulting engineer for all these other cities?

Answer: It is not difficult for you to understand that as a lawyer, but I think that any engineer can understand that it is a matter of sufficient assistants.

Question: Your supervision of the Alexandria company is not personal supervision?

Answer: Yes, as much as any chief engineer gives to the work.

Mr. Harlow: You mean personal supervision of what?

Mr. Fisher: I mean the thing.

The witness: Yes, I gave personal supervision and attention to this plant, this other work has begun since the completion of the installation of the machinery and improvements here.

Question: When was that completed?

Answer: I should say not finally until the early part or the tenth or fifteenth of November, about that time the turbine was constructed, and at that time and I made daily trips to Alexandria then.

Question: Have you ever been around town at night?

Answer: Yes, sir.

Question: What was the hour of your inspection?

Answer: Practically at all hours.

Question: How often have you been in the city of Alexandria since the completion of the installation of the machinery, between 8 and 12 o'clock in the evening?

Answer: At least once a week.

Question: Where do you go?

Answer: Different places. I don't think that is a question for this committee.

Question: Of course, I mean on business.

Answer: It is not the condition on King Street and at the plant and office?

Answer: No, looking around from King Street you can see the lamps in four or five different directions, and coming up Duke Street and Royal Street you can see the lamps out in this section of the town at night.

Question: You say you have a man who makes an hourly visit to see that the lamps are all right?

Answer: Yes, sir.

Question: Don't you mean that he makes it three times a night?

Answer: He makes a report every night. If he sees that a lamp needs fixing on the first round he fixes it and then he goes back to see how it is.

Question: Does he only go to with in a square of the lamps or to the lamps?

Answer: He is supposed to see whether the lamp is burning or not.

Question: You say before you pur-